ThinkPad

ThinkPad® SL300, SL400, and SL500 Service and Troubleshooting Guide

ThinkPad

ThinkPad® SL300, SL400, and SL500 Service and Troubleshooting Guide

Note

Before using this information and the product it supports, be sure to read the following:

- *Safety and Warranty Guide* included in the package with this publication.
- Wireless related information in online *Access Help* and Appendix D, "Notices," on page 61.
- *Regulatory Notice* included in the package with this publication.

The Safety and Warranty Guide and the Regulatory Notice have been uploaded on the Web site. To refer to them, go to http://www.lenovo.com/think/support, click Troubleshooting, and then click User's guides and manuals.

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Contents

Read this first v

Chapter 1. Finding information 1
This guide and other publications 1
Finding information with the Lenovo Care button 2

Chapter 2. Taking care of your ThinkPad computer 3
Important tips. 3
Be careful about where and how you work 3
Be gentle with your computer 4
Register your computer 4
Carry your computer properly 4
Connect the internal modem correctly. . . 4
Handle storage media and drives properly 4
Be sure not to modify your computer . . . 5
Take care in setting passwords 5
Care for the fingerprint reader 5
Cleaning the cover of your computer . . . 5
Cleaning your computer keyboard 6
Cleaning your computer display 6

Chapter 3. Solving computer problems . . 7
Frequently asked questions 7
Entering the BIOS Setup Utility 8
Diagnosing problems 9
Diagnosing problems using PC-Doctor from the service partition 9
Troubleshooting. 10
Error messages 10
Errors without messages 16
Memory problems 18
Password problems 18
Keyboard problems 19
Pointing device problems 19
Sleep (standby) or hibernation problems 20
Computer screen problems 22
Battery problems 25
AC adapter problems 25
Hard disk drive (HDD) problems 26
Fingerprint reader problems 26
Startup problems 26

Chapter 4. Recovery options 29
Introducing Rescue and Recovery 29
Restoring the factory contents 29
Recovering data. 31

Chapter 5. Upgrading and replacing devices 33
Replacing the battery 33
Upgrading the hard disk drive 34
Replacing memory 37

Chapter 6. Getting help and service . . . 45
Getting help and service 45
Getting help on the Web 45
Calling the Customer Support Center . . . 45
Getting help around the world 47
Worldwide telephone list. 47

Appendix A. Warranty information 53
Types of warranty service 53

Appendix B. Customer Replaceable Units (CRUs) 55

Appendix C. Features and Specifications 57
Features 57
Specifications 58

Appendix D. Notices. 61
Notices. 61
Export classification notice 62
Electronic emissions notices 62
Federal Communications Commission (FCC) Statement 62
Industry Canada Class B emission compliance statement 63
Avis de conformité à la réglementation d'Industrie Canada. 63
European Union EMC Directive conformance statement 63
EU-EMC Directive (2004/108/EC) EN 55022 class B Statement of Compliance . . 64
Japanese VCCI Class B statement 65
EU WEEE Statements 65

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Notice for users in the U.S.A. 65
ENERGY STAR model information 66
Notice for Regulatory information 68

Trademarks 69

Index 71

Read this first

Be sure to follow the important tips given here to continue to get the most use and enjoyment out of your computer. Failure to do so might lead to discomfort or injury, or cause your computer to fail.

Protect yourself from the heat that your computer generates.

When your computer is turned on or the battery is charging, the base, the palm rest, and some other parts may become *hot*. The temperature they reach depends on the amount of system activity and the level of charge in the battery.

Extended contact with your body, even through clothing, could cause discomfort or even a skin burn.

- *Avoid* keeping your hands, your lap, or any other part of your body in contact with a hot section of the computer for any extended time.
- Periodically *take breaks* from using the keyboard by lifting your hands from the palm rest.

Protect yourself from the heat generated by the AC adapter.

When the AC adapter is connected to an electrical outlet and your computer, it generates heat.

Extended contact with your body, even through clothing, may cause a skin burn.

- *Do not* place the AC adapter in contact with any part of your body while it is in use.
- *Never* use it to warm your body.

Prevent your computer from getting wet.

To avoid spills and the danger of electrical shock, keep liquids away from your computer.

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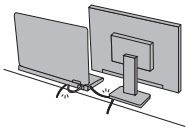
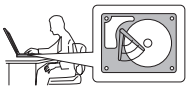
Protect the cables from being damaged.



Applying strong force to cables may damage or break them.

Route communication lines, or the cables of an AC adapter, a mouse, a keyboard, a printer, or any other electronic device, so that they cannot be walked on, tripped over, pinched by your computer or other objects, or in any way subjected to treatment that could interfere with the operation of your computer.

Protect your computer and data when moving it.



Before moving a computer equipped with a hard disk drive, do one of the following, and make sure that the power-on indicator is off:

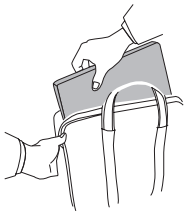
- Turn it off.
- Press Fn+F4 to put it in sleep (standby) mode.
- Press Fn+F12 to put it in hibernation mode.

This will help to prevent damage to the computer, and possible loss of data.

Handle your computer gently.

Do not drop, bump, scratch, twist, hit, vibrate, push, or place heavy objects on your computer, display, or external devices.

Carry your computer carefully.



- Use a quality carrying case that provides adequate cushioning and protection.
- *Do not* pack your computer in a tightly packed suitcase or bag.

Chapter 1. Finding information

This guide and other publications

Setup Instructions

helps you to unpack your ThinkPad® computer and get started. It includes a few tips for first-time users.

This *Service and Troubleshooting Guide*

provides information about caring for your ThinkPad computer, basic troubleshooting information, some recovery procedures, help and service information, and warranty information for your computer. The troubleshooting information in this Guide applies only to problems that might prevent you from accessing the comprehensive online manual, called Access Help, preinstalled on your ThinkPad computer.

Access Help

is a comprehensive online manual that provides answers to most of your questions about your computer, helps you to configure preloaded features and tools, or solve problems. To open Access Help, do either of the following:

- Press the Lenovo Care℠ button. Under Quick Links in the Lenovo Care, click **Access on-system help**.
- Click **Start**, move the pointer to **All Programs**; then to **ThinkVantage®**. Click **Access Help**.

Safety and Warranty Guide

includes general safety instructions and complete Lenovo™ Limited Warranty.

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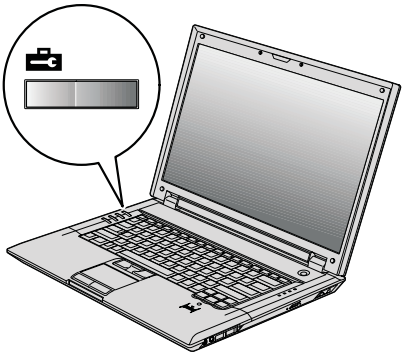
Regulatory Notice

supplements this Guide. Read it before you use the wireless features of your ThinkPad computer. The ThinkPad computer complies with the radio frequency and safety standards of any country or region in which it has been approved for wireless use. You are requested to install and use your ThinkPad computer in strict accordance with the local RF regulations.

Finding information with the Lenovo Care button



The blue Lenovo Care button can help you in many situations when your computer is working normally, and even when it is not. Press the Lenovo Care button to open the Lenovo Care and get access to informative illustrations and easy-to-follow instructions for getting started and staying productive.

You can also use the Lenovo Care button to interrupt the startup sequence of your computer and start the Rescue and Recovery™ workspace, which runs independently of the Windows® operating system and is hidden from it.

Chapter 2. Taking care of your ThinkPad computer

Though your computer is designed to function reliably in normal work environments, you need to use common sense in handling it. By following these important tips, you will get the most use and enjoyment out of your computer.

For the most important instructions for using your computer, see “Read this first” on page v.

Important tips

Be careful about where and how you work

- Store packing materials safely out of the reach of children to prevent the risk of suffocation from plastic bags.
- Keep your computer away from magnets, activated cellular phones, electrical appliances, or speakers (within 13 cm or 5″).
- Avoid subjecting your computer to extreme temperatures (below 5°C/41°F or above 35°C/95°F).
- Some appliances, such as certain portable desktop fans or air purifiers, can produce negative ions. If a computer is close to such an appliance, and is exposed for an extended time to air containing negative ions, it may become electrostatically charged. Such a charge may be discharged through your hands when you touch the keyboard or other parts of the computer, or through connectors on I/O devices connected to it. Even though this kind of electrostatic discharge (ESD) is the opposite of a discharge from your body or clothing to the computer, it poses the same risk of a computer malfunction.

  Your computer is designed and manufactured to minimize any effects of electrostatic charge. An electrostatic charge above a certain limit, however, can increase the risk of ESD. Therefore, when using the computer close to an appliance that can produce negative ions, give special attention to the following:

  – Avoid directly exposing your computer to the air from an appliance that can produce negative ions.
  – Keep your computer and peripherals as far as possible from such an appliance.
  – Wherever possible, ground your computer to facilitate safe electrostatic discharge.

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Note: Not all such appliances cause a significant electrostatic charge.

Be gentle with your computer

- Avoid placing any objects (including paper) between the display and the keyboard or the palm rest.
- Your computer display is designed to be opened and used at an angle slightly greater than 90 degrees. Do not open the display beyond 150 degrees, as this might damage the computer hinge.
- Do not turn your computer over while the AC adapter is plugged in. This could break the adapter plug.

Register your computer

- Register your ThinkPad products with Lenovo (visit the following Web site: http://www.lenovo.com/register). This can help authorities return your computer to you if it is lost or stolen. Registering your computer also enables Lenovo to notify you about possible technical information and upgrades.

Carry your computer properly

- Before moving your computer, be sure to remove any media, turn off attached devices, and disconnect cords and cables.
- When picking up your open computer, hold it by the bottom. Do not pick up or hold your computer by the display.

Connect the internal modem correctly

- Your computer modem might use only an analog telephone network, or public-switched telephone network (PSTN). Do not connect the modem to a PBX (private branch exchange) or any other digital telephone extension line because this could damage your modem. Analog phone lines are often used in homes, while digital phone lines are often used in hotels or office buildings. If you are not sure which kind of phone line you are using, contact your telephone company.
- Your computer might have both an Ethernet connector and a modem connector. If so, be sure to connect your communication cable to the correct one, so your connector is not damaged.

Handle storage media and drives properly

- If your computer comes with an optical drive, do not touch the surface of a disc or the lens on the tray.
- Wait until you hear the CD or DVD click into the center pivot of an optical drive before closing the tray.
- When installing the HDD or optical drive, follow the instructions shipped with your hardware, and apply pressure only where needed on the device.
- Turn off your computer if you are replacing the HDD.
- When replacing the primary HDD, reattach the cover of the drive slot.

- Store your external and removable hard disk or optical drives in the appropriate containers or packaging when they are not being used.
- Before you install any of the following devices, touch a metal table or a grounded metal object. This action reduces any static electricity from your body. The static electricity could damage the device.
  - Memory module
  - PCI Express Mini Card
  - ExpressCard
  - Memory Card, such as xD-Picture Card, SD Card, Memory Stick, and MultiMediaCard

Note: When transferring data to or from a Flash Media Card, such as an SD card, do not put your computer in sleep (standby) or hibernation mode before the data transfer is complete. To do so might cause damage to your data.

Be sure not to modify your computer

- Only an authorized ThinkPad repair technician should disassemble and repair your computer.
- Do not modify or tape the latches to keep the display open or closed.

Take care in setting passwords

- Remember your passwords. If you forget a supervisor or hard disk password, Lenovo authorized service provider cannot reset it, and you will have to replace your system board, or HDD.

Care for the fingerprint reader

The following actions could damage the fingerprint reader or cause it not to work properly:

- Scratching the surface of the reader with a hard, pointed object.
- Scraping the surface of the reader with your nail or anything hard.
- Using or touching the reader with a dirty finger.

If you notice any of the following conditions, gently clean the surface of the reader with a dry, soft, lint-free cloth:

- The surface of the reader is dirty or stained.
- The surface of the reader is wet.
- The reader often fails to enroll or authenticate your fingerprint.

Cleaning the cover of your computer

Occasionally clean your computer as follows:

1. Prepare a mixture of a gentle kitchen-use detergent (one that does not contain abrasive powder or strong chemicals such as acid or alkaline). Use 5 parts water to 1 part detergent.
2. Absorb the diluted detergent into a sponge.

3. Squeeze excess liquid from the sponge.
4. Wipe the cover with the sponge, using a circular motion and taking care not to let any excess liquid drip.
5. Wipe the surface to remove the detergent.
6. Rinse the sponge with clean running water.
7. Wipe the cover with the clean sponge.
8. Wipe the surface again with a dry, soft lint-free cloth.
9. Wait for the surface to dry completely and remove any cloth fibers from the computer surface.

Cleaning your computer keyboard

1. Absorb some isopropyl rubbing alcohol on a soft, dust-free cloth.
2. Wipe each keytop surface with the cloth. Wipe the keys one by one; if you wipe several keys at a time, the cloth may hook onto an adjacent key and possibly damage it. Make sure that no liquid drips onto or between the keys.
3. Allow to dry.
4. To remove any crumbs and dust from beneath the keys, you can use a camera blower with a brush or cool air from a hair drier.

Note: Avoid spraying cleaner directly on the display or the keyboard.

Cleaning your computer display

1. Gently wipe the display with a dry, soft lint-free cloth. If you see a scratch-like mark on your display, it might be a stain transferred from the keyboard or the TrackPoint® pointing stick when the cover was pressed from the outside.
2. Wipe or dust the stain gently with a soft, dry cloth.
3. If the stain remains, moisten a soft, lint-free cloth with water or a 50-50 mixture of isopropyl alcohol and water that does not contain impurities.
4. Wring out as much of the liquid as you can.
5. Wipe the display again; do not let any liquid drip into the computer.
6. Be sure to dry the display before closing it.

Chapter 3. Solving computer problems

Note: See *Access Help* if your system is running and Access Help is accessible. This chapter presents information for use when Access Help is inaccessible.

Frequently asked questions

This section lists frequently asked questions and tells where you can find detailed answers. For details about each publication included in the package with the ThinkPad computer, see "This guide and other publications" on page 1.

What safety precautions should I follow when using my ThinkPad computer?

See the separate *Safety and Warranty Guide* for detailed information about safety.

How can I prevent problems with my ThinkPad computer?

See "Read this first" on page v, and also Chapter 2, "Taking care of your ThinkPad computer," on page 3 of this Guide. More tips can be found in the following sections of *Access Help*:

- Preventing problems
- Troubleshooting

What are the main hardware features of my new ThinkPad computer?

See "About your computer" in *Access Help*.

Where can I find the detailed specifications for my ThinkPad computer?

See http://www.lenovo.com/think/support.

I need to upgrade a device *or* I need to replace one of the following: the HDD, the PCI Express Mini Card, the memory, the keyboard, or the palm rest.

See the Appendix B, "Customer Replaceable Units (CRUs)," on page 55 of this Guide for the list of Customer Replaceable Units and the location of the instructions for removing or replacing components.

My computer is not operating properly.

See "Problem solving" in *Access Help*. This guide describes methods of troubleshooting for use when online Access Help is inaccessible.

Where are the recovery discs?

Your computer may have come with or without a recovery disc or Windows disc depending on your model. For an explanation of the alternative recovery methods offered by Lenovo, see "Restoring the factory contents" on page 29 of this Guide.

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How can I contact the Customer Support Center?

See Chapter 6, "Getting help and service," on page 45 of this Guide. For the phone numbers of the Customer Support Center nearest to you, see "Worldwide telephone list" on page 47.

Where can I find warranty information?

See the separate *Safety and Warranty Guide* for detailed warranty information. For the warranty applicable to your computer, including the warranty period and type of warranty service, see Appendix A, "Warranty information," on page 53.

Entering the BIOS Setup Utility

Your computer provides a program, called BIOS Setup Utility, that enables you to select various setup parameters.

- Main: Display the system information of your computer.
- Config: Set the configuration of your computer.
- Date/Time: Set the date and time.
- Security: Set security features.
- Startup: Set the startup device.
- Restart: Restart the system.

To enter the BIOS Setup Utility, do as follows:

1. To protect yourself against accidental loss of data, back up your data and computer registry. For details, see "Basics" in *Access Help*.
2. Turn off the computer, and then turn it on again.
3. When the ThinkPad logo comes up, immediately press F1 to enter the BIOS Setup Utility.

   If you have set a supervisor password, the BIOS Setup Utility menu appears after you enter the password. You can start the utility by pressing Enter instead of entering the supervisor password; however, you cannot change the parameters that are protected by the supervisor password. For more information, see the on-board help.
4. Using the cursor keys, move to an item you want to change. When the item you want is highlighted, press Enter. A submenu is displayed.
5. Change the items you wish to change. To change the value of an item, use the + or - key. If the item has a submenu, you can display it by pressing Enter.
6. Press Esc to exit from the submenu. If you are in a nested submenu, press Esc repeatedly until you reach the **BIOS Setup Utility** menu.

   Note: If you need to restore the settings to their original state as of the time of purchase, press F9 key to load the default settings. You can also select an option in the Restart submenu to load manufacture default or user defaults settings or discard the changes.

7. Select **Restart**; then press Enter. Move the cursor to the option you want for restarting your computer; then press Enter. Your computer restarts.

Diagnosing problems

If you have a problem with your computer, you can test it by using PC-Doctor® for Windows.

To run PC-Doctor for Windows, do as follows:

1. Click **Start**.
2. Move the pointer to **All Programs** and then to **PC-Doctor for Windows**.
3. Click **PC-Doctor for Windows**.

For more information about PC-Doctor for Windows, see the Help for the program.

Attention:

- If you need help or further information about the problem, choose any of the following:
  - Lenovo Troubleshooting Center
  - Update System Drivers
  - System Information
- Running any tests may take up to several minutes or longer. Make sure you have time to run the entire test; do not interrupt the test while it is running.

When preparing to contact the Customer Support Center, be sure to print the test log so that you can rapidly provide information to the help technician.

Diagnosing problems using PC-Doctor from the service partition

By using PC-Doctor from the Rescue and Recovery workspace in the service partition of the hard disk drive, you can diagnose your system without starting up the operating system.

To run PC-Doctor, do as follows:

1. Turn off the computer, and then turn it on again.
2. When the ThinkPad logo comes up, immediately press the Lenovo Care button, F11, or Enter key. The Rescue and Recovery workspace opens.
3. Click **Diagnose hardware**.

For more information about PC-Doctor, see the Help for the program.

Troubleshooting

If you do not find your problem here, see *Access Help*. The following section only describes problems that might prevent you from accessing this help system.

Error messages

Note:
1. In the charts, x can be any character.
2. The version of PC-Doctor referred to here is PC-Doctor for Windows.

Message	Solution
1802: Unauthorized network card is plugged in - Power off and remove the miniPCI network card.	The miniPCI network card is not supported on this computer. Remove it.
1804: Unauthorized WAN card is plugged in - Power off and remove the WAN card.	The WAN card is not supported on this computer. Remove it.
1805: Unauthorized Wireless USB card is plugged in - Power off and remove the Wireless USB card.	The Wireless USB card is not supported on this computer. Remove it.
1810: Fan Error	The Fan module is not support.
1811: Thermal sensing error	Detect Thermal sensor had error status during post stage.
7001: (HDCP) Memory is not enough for HDCP Key Provisioning!	System memory is not enough for Intel® HDCP key provisioning. Please add more system memory.
7002: (HDCP) Failed to check the key set Family-EKS!	Family-EKS in EEPROM is not correct. Please replace another HDCP EEPROM
7003: (HDCP) Chip-Unique-EKS re-encryption failed!	Chip-Unique-EKS re-encryption failed. This may be caused by broken or non-specified GMCH. Please try to replace GMCH.
7004: (HDCP) Failed to check the key set Chip-Unique-EKS!	Chip-Unique-EKS in EEPROM is not correct. Please replace another HDCP EEPROM.

Message	Solution
7005: (HDCP) Cipher Initialization with Chip-Unique-EKS failed!	Cipher Initialization failed. This may be caused by broken or non-specified GMCH. Please try to replace GMCH.
8100: Gate20 Error	The BIOS is unable to properly control the motherboard's Gate A20 function, which controls access of memory over 1 MB. This may indicate a problem with the motherboard.
8101: Multi-Bit ECC Error	This message will only occur on systems using ECC enabled memory modules. ECC memory has the ability to correct single-bit errors that may occur from faulty memory modules. A multiple bit corruption of memory has occurred, and the ECC memory algorithm cannot correct it. This may indicate a defective memory module.
8102: Parity Error	Fatal Memory Parity Error. System halts after displaying this message.
8103: RAM R/W test failed.	This message is displayed by the AMIBIOS8 when the RAM read/write test fails.
8104: CMOS Memory Size Wrong	The base memory (memory below 1MB) size that is reported in the CMOS (offset 15h) mismatches with the actual size detected. This condition may occur when the hole is set at 512K base memory or when CMOS is corrupted.
8200: Boot Failure ...	This is a generic message indicating the BIOS could not boot from a particular device. This message is usually followed by other information concerning the device.
8201: Invalid Boot Diskette	A diskette was found in the drive, but it is not configured as a bootable diskette.
8202: Drive Not Ready	The BIOS was unable to access the drive because it indicated it was not ready for data transfer. This is often reported by drives when no media is present.
8203: A: Drive Error	The BIOS attempted to configure the A: drive during POST, but was unable to properly configure the device. This may be due to a bad cable or faulty diskette drive.
8204: B: Drive Error	The BIOS attempted to configure the B: drive during POST, but was unable to properly configure the device. This may be due to a bad cable or faulty diskette drive.
8205: Insert BOOT diskette in A:	The BIOS attempted to boot from the A: drive, but could not find a proper boot diskette.
8206: Reboot and Select proper Boot device or Insert Boot Media in selected Boot device	BIOS could not find a bootable device in the system and/or removable media drive does not contain media.

Message	Solution
8207: NO ROM BASIC	This message occurs on some systems when no bootable device can be detected.
8318: S.M.A.R.T. Capable but Command Failed	The BIOS tried to send a S.M.A.R.T. message to a hard disk, but the command transaction failed. This message can be reported by an ATAPI device using the S.M.A.R.T. error reporting standard.S.M.A.R.T. failure messages may indicate the need to replace the hard disk.
8319: S.M.A.R.T. Command Failed	The BIOS tried to send a S.M.A.R.T. message to a hard disk, but the command transaction failed. This message can be reported by an ATAPI device using the S.M.A.R.T. error reporting standard.S.M.A.R.T. failure messages may indicate the need to replace the hard disk.
831A: S.M.A.R.T. Status BAD, Backup and Replace	A S.M.A.R.T. capable hard disk sends this message when it detects an imminent failure. This message can be reported by an ATAPI device using the S.M.A.R.T. error reporting standard. S.M.A.R.T. failure messages may indicate the need to replace the hard disk.
831B: S.M.A.R.T. Capable and Status BAD	A S.M.A.R.T. capable hard disk sends this message when it detects an imminent failure. This message can be reported by an ATAPI device using the S.M.A.R.T. error reporting standard. S.M.A.R.T. failure messages may indicate the need to replace the hard disk.
8400: BootSector Write !!	The BIOS has detected software attempting to write to a drive's boot sector. This is flagged as possible virus activity. This message will only be displayed if Virus Detection is enabled in AMIBIOS setup.
8401: VIRUS: Continue (Y/N)?	If the BIOS detects possible virus activity, it will prompt the user. This message will only be displayed if Virus Detection is enabled in AMIBIOS setup.
8500: DMA-1 Error	Error initializing primary DMA controller. This is a fatal error, often indicating a problem with system hardware.
8501: DMA-2 Error	Error initializing secondary DMA controller. This is a fatal error, often indicating a problem with system hardware.
8502: DMA Controller Error	POST error while trying to initialize the DMA controller. This is a fatal error, often indicating a problem with system hardware.
8503: Checking NVRAM..Update Failed	BIOS could not write to the NVRAM block. This message appears when the FLASH part is write-protected or if there is no FLASH part (System uses a PROM or EPROM).

Message	Solution
8504: Microcode Error	BIOS could not find or load the CPU Microcode Update to the CPU. This message only applies to Intel CPUs. The message is most likely to appear when a brand new CPU is installed in a motherboard with an outdated BIOS. In this case, the BIOS must be updated to include the Microcode Update for the new CPU.
8505: NVRAM Checksum Bad, NVRAM Cleared	There was an error while validating the NVRAM data. This causes POST to clear the NVRAM data.
8506: Resource Conflict	More than one system device is trying to use the same non-shareable resources (Memory or I/O).
8507: NVRAM Ignored	The NVRAM data used to store Plug'n'Play (PnP) data was not used for system configuration in POST.
8508: NVRAM Bad	The NVRAM data used to store Plug'n'Play (PnP) data was not used for system configuration in POST due to a data error.
8509: Static Resource Conflict	Two or more Static Devices are trying to use the same resource space (usually Memory or I/O).
850A: PCI I/O conflict	A PCI adapter generated an I/O resource conflict when configured by BIOS POST.
850B: PCI ROM conflict	A PCI adapter generated an I/O resource conflict when configured by BIOS POST.
850C: PCI IRQ conflict	A PCI adapter generated an I/O resource conflict when configured by BIOS POST.
850D: PCI IRQ routing table error	BIOS POST (DIM code) found a PCI device in the system but was unable to figure out how to route an IRQ to the device. Usually this error is caused by an incomplete description of the PCI Interrupt Routing of the system.
850E: Timer Error	Indicates an error while programming the count register of channel 2 of the 8254 timer. This may indicate a problem with system hardware.
850F: Refresh timer test failed	BIOS POST found that the refresh timer hardware failed to pass the Refresh Retrace Test.
8510: Interrupt Controller-1 error	BIOS POST could not initialize the Master Interrupt Controller. This may indicate a problem with system hardware.
8511: Interrupt Controller-2 error	BIOS POST could not initialize the Slave Interrupt Controller. This may indicate a problem with system hardware.
8600: CMOS Date/Time Not Set	The CMOS Date and/or Time are invalid. This error can be resolved by readjusting the system time in AMIBIOS Setup.
8601: CMOS Battery Low	CMOS Battery is low. This message usually indicates that the CMOS battery needs to be replaced. It could also appear when the user intentionally discharges the CMOS battery.

Message	Solution
8602: CMOS Settings Wrong	CMOS settings are invalid. This error can be resolved by using AMIBIOS Setup.
8603: CMOS Checksum Bad	CMOS contents failed the Checksum check. Indicates that the CMOS data has been changed by a program other than the BIOS or that the CMOS is not retaining its data due to malfunction. This error can typically be resolved by using AMIBIOS Setup.
8700: KBC BAT Test failed	Keyboard controller BAT test failed. This may indicate a problem with keyboard controller initialization.
8701: Keyboard Error	Keyboard is not present or the hardware is not responding when the keyboard controller is initialized.
8702: PS2 Keyboard not found	PS2 Keyboard support is enabled in the BIOS setup but the device is not detected.
8703: PS2 Mouse not found	PS2 Mouse support is enabled in the BIOS setup but the device is not detected
8704: Keyboard/Interface Error	Keyboard Controller failure. This may indicate a problem with system hardware.
8705: Unlock Keyboard	PS2 keyboard is locked. User needs to unlock the keyboard to continue the BIOS POST.
8706: System Halted	The system has been halted. A reset or power cycle is required to reboot the machine. This message appears after a fatal error has been detected.
8707: <INS> Pressed	Indicates that <INS> key is pressed during the BIOS POST. The POST will load and use default CMOS settings.
8708: Password check failed	The password entered does not match the password set in the setup. This condition may occur for both Supervisor and User password verification.
8709: Unknown BIOS error. Error code = 004Ah	This message is displayed when ADM module is not present in the AMIBIOS8 ROM.
870A: Unknown BIOS error. Error code = 004Bh	This message is displayed when language module is not present in the AMIBIOS8 ROM.
870B: Floppy Controller Failure	Error in initializing legacy Floppy Controller.
8800: Warning! Unsupported USB device found and disabled!	This message is displayed when a non-bootable USB device is enumerated and disabled by the BIOS.

Message	Solution
8801: Warning! Port 60h/64h emulation is not supported by this USB Host Controller!	This message is displayed to indicate that port 60h/64h emulation mode cannot be enabled for this USB host controller. This condition occurs if USB KBC emulation option is set for non-SMI mode.
8802: Warning! EHCI controller disabled. It requires 64bit data support in the BIOS.	This message is displayed to indicate that EHCI controller is disabled because of incorrect data structure. This condition occurs if the USB host controller needs 64-bit data structure while the USB is ported with 32-bit data structure.
8900: Not enough space in Runtime area!!. SMBIOS data will not be available.	This message is displayed when the size of the SMBIOS data exceeds the available SMBIOS runtime storage size.
8A00: Warning! This system board does not support the power requirements of the installed processor. The processor will be run at a reduced frequency, which will impact system performance.	This message is displayed when the power requirements of the board do not match the power requirement of the CPU.
8B00: Insufficient Runtime space for MPS data! System may operate in PIC or Non-MPS mode.	This message is displayed when there is not enough space in the 0F000h runtime area for creating MPS table.

Beep errors	
One beep and a blank, unreadable, or flashing LCD	If an external monitor is attached, confirm that the cable of the external monitor is connected to the system. If the problem persists, contact the administrator.
One long and two short beeps, and a blank or unreadable LCD	Confirm that the memory cards have been installed correctly. If the problem persists, contact the administrator.
Two short beeps with error codes	Refer to POST error or POST message.
Two short beeps and a blank screen	Confirm that the memory cards have been installed correctly. If the problem persists, contact the administrator.

Beep errors	
Three short beeps, pause, three more short beeps, and one short beep.	Confirm that the memory cards have been installed correctly. If the problem persists, contact the administrator.
One short beep, pause, three short beeps, pause, three more short beeps, and one short beep. Only the cursor appears.	Reinstall the operating system.
Five short beeps and a blank screen	Contact the administrator.

Errors without messages

Problem:

When I turn on the machine, nothing appears on the screen and the machine does not beep while starting up.

Note: If you are not sure whether you heard any beeps:

1. Turn off the computer by pressing and holding the power switch for 4 seconds or more.
2. Turn it on and listen again.

Solution:

1. Make sure that:
   - The battery is installed correctly.
   - The AC adapter is connected to the computer and the power cord is plugged into a working electrical outlet.
   - The computer is turned on. (Turn the power switch on again for confirmation.)
2. If a power-on password is set:
   a. Press any key to display the prompt for the power-on password. If the brightness level of the screen is low, increase it by pressing the Fn+End.
   b. Type the correct password and press Enter.
3. If these items are set properly, and the screen remains blank, have the computer serviced.

Problem:

When I turn on the machine, only a white cursor appears on a blank screen.

Solution:

Note: If you have modified a partition on your HDD by using a partition software, information about that partition, or the master boot record, may have been destroyed.

1. Turn off the computer, and then turn it on again.
2. If you still see only the cursor on the screen, do the following:
   - If you have used the partition software, examine the partition on the HDD by using the software, and recover the partition if required.
   - Use either the Rescue and Recovery workspace or the recovery discs to restore the system to the factory state.

     For details about restoring the system to the factory state, see Chapter 4, "Recovery options," on page 29.
3. If the problem persists, have the computer serviced.

Problem:

The screen goes blank while the computer is on.

Solution:

Your screen saver or power management may be enabled.

Do either of the following:

- Move the TrackPoint or press a key to exit the screen saver.
- Press the power switch to resume from sleep (standby) or hibernation.

Problem:

The computer does not respond.

Solution:

1. Turn off the computer by pressing and holding the power switch for 4 seconds or more.
2. If the computer still does not respond, remove and reinstall the AC adapter and the battery.

Your computer might lock when it enters sleep (standby) mode during a communication operation. Disable the sleep (standby) timer when you are working on the network.

Memory problems

Problem:

Your memory is not operating properly.

Solution:

1. Verify that the memory is installed and seated correctly in your computer.

   It may be necessary to remove all added memories to test the computer with only the factory-installed memories, and then reinstall the memory one at a time to ensure a proper connection. For the procedures to remove and reinstall a memory, refer to “Replacing memory” on page 37.
2. Check for error messages during startup.

   Follow the appropriate corrective actions for Power-on self-test (POST) error messages.
3. Verify that the latest BIOS for your computer has been installed.
4. Verify the proper memory configuration and compatibility including the maximum memory size and the memory speed.

   For details, refer to the instructions in “Replacing memory” on page 37.
5. Run PC-Doctor for Windows.

   If you cannot startup Windows, use PC-Doctor from the service partition on your hard disk drive.

Password problems

Problem:

You forgot your password.

Solution:

- If you forget your power-on password, you must take your computer to a Lenovo authorized servicer or a marketing representative to have that password canceled.
- If you forget your hard disk password, a Lenovo authorized servicer cannot reset your password or recover data from the HDD. You must take your computer to a Lenovo authorized servicer or a marketing representative to have the HDD replaced. Proof of purchase is required, and a fee will be charged for parts and service.
- If you forget your supervisor password, a Lenovo authorized servicer cannot reset your password. You must take your computer to a Lenovo authorized servicer or a marketing representative to have the system board replaced. Proof of purchase is required, and a fee will be charged for parts and service.

Keyboard problems

Problem:

All or some keys on the keyboard do not work.

Solution:

For Windows Vista®:

1. Click **Start** → **Control Panel**.
2. Click **Hardware and Sound**, and then click **Keyboard**.
3. Select the **Hardware** tab. In the Device Properties, make sure that the Device Status is **This device is working properly**.

For Windows XP:

1. Click **Start** → **Control Panel**.
2. Click **Printers and Other Hardware**, and then click **Keyboard**.
3. Select the **Hardware** tab. In the Device Properties, make sure that the Device Status is **This device is working properly**.

If keys on the keyboard still do not work, have the computer serviced.

Problem:

A number appears when you type a letter.

Solution:

The numeric lock function is on. To disable it, press and hold Shift or Fn and then press NmLk (Delete).

Problem:

All or some keys on the external keyboard or numeric keypad do not work.

Solution:

Make sure that the external keyboard or numeric keypad is correctly connected to the computer.

Pointing device problems

Problem:

The scrolling or magnifying glass function does not work.

Solution:

Check the mouse driver in the Device Manager window, and make sure that the ThinkPad UltraNav® Pointing Device driver is installed.

Sleep (standby) or hibernation problems

Problem:

The computer enters sleep (standby) mode (the sleep/standby indicator turns on) immediately after Power-on self-test (POST).

Solution:

1. Make sure that:
   - The battery is charged.
   - The operating temperature is within the acceptable range. See "Specifications" on page 58.
2. If these items are correct, have the computer serviced.

Problem:

The `critical low-battery error` message is displayed, and the computer immediately turns off.

Solution:

The battery power is getting low.

Do either of the following:

- Connect the AC adapter to the computer and plug it into an electrical outlet.
- Replace the battery with a fully charged one.

Problem:

When you take action to return from sleep (standby) mode, the computer display remains blank.

Solution:

1. Check whether an external monitor was turned off while the computer was in sleep (standby) mode.
2. Do either of the following:
   - Turn on the external monitor to display the image on it.
   - Press Fn+F7 to bring up the image on the computer screen.

     Note: If you use the Fn+F7 key combination to apply a presentation scheme, press Fn+F7 at least three times in three seconds.
3. If the problem persists, do the Solution in the following Problem.

Problem:

While operating with the battery, the computer does not return from sleep (standby) mode, or the sleep (standby) indicator stays on and the computer does not work.

Solution:

The system may have entered sleep (standby) or hibernation mode automatically because the battery is depleted.

1. Connect the AC adapter to the computer.
2. If the sleep (standby) indicator is on, press Fn. If the sleep (standby) indicator is off, press the power switch to resume operation.
3. If you press Fn or the power switch, and the system does not return from sleep (standby) or hibernation mode, the computer stops responding and cannot be turned off:
   a. Turn off the computer by pressing and holding the power switch for 4 seconds or more. Unsaved data may be lost.
   b. If the computer still does not respond, remove and reinstall the AC adapter and the battery.

Problem:

The computer enters sleep (standby) mode unexpectedly.

Solution:

1. Make sure that the settings in Power Manager are set properly.
   a. Start Power Manager by clicking **Start** → **All programs** → **ThinkVantage** → **Power Manager**.
   b. On the **Power Plan** tab (in Windows XP, On the **Power Scheme** tab), select the name of the Plan you want. Under **System settings**, check the setting of **Enter System standby**.
   c. On the **Global Power Settings** tab, make sure that the settings under **Alarms** are set properly.
2. Make sure that no object blocks the air vents of the computer.

   When the processor overheats, the computer automatically enters sleep (standby) mode to cool down and to protect the processor and other internal components.
   a. Allow the computer to cool.
   b. Press Fn to return from sleep (standby) mode.
3. If the computer still enters sleep (standby) mode unexpectedly, the internal fan or other parts may have failed. Have the computer serviced.

Computer screen problems

Problem:

Incorrect characters appear on the screen.

Solution:

1. Make sure that the operating system and the application program are installed correctly.
2. If they are installed and configured correctly, have the computer serviced.

Problem:

Missing, discolored, or bright dots appear on the screen every time I turn on my computer.

Solution:

This is an intrinsic characteristic of the TFT technology. Your computer's display contains multiple thin-film transistors (TFTs). A small number of missing, discolored, or bright dots on the screen might exist all the time.

Problem:

The screen is blank.

Solution:

1. Do the following:
   - Press Fn+F7 to bring up the image.

     Note: If you use the Fn+F7 key combination to apply a presentation scheme, press Fn+F7 at least three times in three seconds.
   - If you are using the AC adapter, or using the battery, and the battery status indicator is on (is green), press Fn+End to make the screen brighter.
   - If the sleep (standby) status indicator is on (is green), press Fn to resume from the sleep (standby) mode.
2. If the problem persists, do the Solution in the following Problem.

Problem:

The screen is unreadable or distorted.

Solution:

Make sure that:

- The screen resolution and color quality are correctly set.
- The display device driver is installed correctly.
- The monitor type is correct.

To check these settings, do as follows:

For Windows Vista:

1. Right-click on the desktop, click **Personalize**, then click **Display Settings**.
2. Check whether the screen resolution and color quality are correctly set.
3. Click **Advanced Settings**.
4. Click the **Adapter** tab.
5. Make sure that the correct device driver name is shown in the adapter information window.
   Note: The device driver name depends on the video chip that has been installed on your computer.
6. Click the **Properties** button. If you are prompted for an administrator password or confirmation, type the password or provide confirmation. Check the ″Device status″ box and make sure that the device is working properly. If not, click the **Troubleshoot** button.
7. Click the **Monitor** tab.
8. Make sure that the information is correct.
9. Click the **Properties** button. If you are prompted for an administrator password or confirmation, type the password or provide confirmation. Check the ″Device status″ box and make sure the device is working properly. If not, click the **Troubleshoot** button.

Solution (continued):

For Windows XP:

1. Right-click on the desktop, click **Properties** to open the Display Properties window, then click the **Settings** tab.
2. Check whether the screen resolution and color quality are correctly set.
3. Click **Advanced**.
4. Click the **Adapter** tab.
5. Make sure that the correct device driver name is shown in the adapter information window.
   Note: The device driver name depends on the video chip that has been installed on your computer.
6. Click the **Properties** button. Check the "Device status" box and make sure that the device is working properly. If not, click the **Troubleshoot** button.
7. Click the **Monitor** tab.
8. Make sure that the information is correct.
9. Click the **Properties** button. Check the "Device status" box and make sure that the device is working properly. If not, click the **Troubleshoot** button.

Problem:

A message, "Unable to create overlay window," appears when I try to start DVD playback.
-or-
I get poor or no playback while running video playback, DVD playback, or game applications.

Solution:

Do either of the following:

- If you are using 32-bit color mode, change the color depth to 16-bit mode.
- If you are using an external display device with a desktop size of 1600 × 1200 or larger (4:3), or 1680 × 1050 (16:10) or larger, reduce the refresh rate or color depth.

Battery problems

Problem:

The battery does not charge.

-or-

The operating time for a fully charged battery is short.

-or-

The battery cannot be fully charged by the power-off method in the standard charge time for the computer.

Solution:

For details, see "Problem solving" in *Access Help*

Problem:

The computer does not operate with a fully charged battery.

Solution:

The surge protector in the battery might be active. Turn off the computer for one minute to reset the protector; then turn on the computer again.

Problem:

The computer shuts down before the battery status indicator shows empty.

-or-

The computer operates after the battery status indicator shows empty.

Solution:

Discharge and recharge the battery.

AC adapter problems

Problem:

The AC adapter is connected to the computer and the working electrical outlet, but the power adapter (power plug) icon is not displayed on the task bar. Also the AC power indicator does not light up.

Solution:

1. Make sure that the connection of the AC adapter is correct. For connecting the AC adapter, see the Setup Instructions manual included in the shipping contents of your computer.
2. If the above step is correct, turn off the computer, then disconnect the AC adapter and uninstall the main battery.
3. Reinstall the battery and reconnect the AC adapter, then turn on the computer.
4. If the power adapter icon still does not appear on the task bar and the AC power indicator does not light up, have the AC adapter and your computer serviced.

Hard disk drive (HDD) problems

Problem:

After setting a hard disk password on the HDD of the computer, you moved the drive to another computer. Now you cannot unlock the hard disk password.

Solution:

Your computer supports an enhanced password algorithm. Computers older than yours may not support such a security function.

Fingerprint reader problems

Problem:

You cannot register or authenticate your finger.

Solution:

If your finger has any of the following conditions, you may not be able to register or authenticate it.

- Your finger is wrinkled, rough, dry, injured, stained, oily, or wet.
- The surface of your finger is very different from when you enrolled your fingerprint.

To improve the situation, try the following:

- If your hands are too dry, apply lotion to them.
- Clean or wipe your hands to remove any excess dirt or moisture from the fingers.
- Enroll and use a different finger for authentication.

Startup problems

Problem:

The Microsoft® Windows operating system will not start.

Solution:

Use the Rescue and Recovery workspace or recovery discs to help solve or identify your problem. For details about Rescue and Recovery, see Chapter 4, “Recovery options,” on page 29.

Problem:

When you start up your computer, the operating system does not start up from the device that should start it up.

Solution:

You may need to confirm the startup sequence of your computer as follows:

1. Turn off the computer, and then turn it on again.
2. When the ThinkPad logo comes up, immediately press F1 to enter the BIOS Setup Utility.
3. Select **Startup**, and press **Enter**.
4. Select **Boot**, and press **Enter**.
5. Make sure that the device is configured so that it can start up the operating system.
6. To save the change, press F10. Select **Yes** and press **Enter**.

Chapter 4. Recovery options

Introducing Rescue and Recovery

If Windows is not running properly, use the Rescue and Recovery workspace to help solve or identify your problem.

1. Turn off the computer, and then turn it on again.
2. When the ThinkPad logo comes up, immediately press the Lenovo Care button, F11, or Enter key.
3. After the Rescue and Recovery workspace opens, you can do the following:
   - Rescue and Restore your files, folders, or backups.
   - Configure your system settings and passwords.
   - Communicate using the Internet and link to the support site.
   - Troubleshoot and diagnose problems using diagnostics.

For more information about using Rescue and Recovery features, see "Problem solving" in *Access Help*.

Restoring the factory contents

The complete backup of all the files and programs that Lenovo preinstalled on your computer may have shipped on recovery discs with your computer or resides in a hidden protected area, or partition, of the HDD. Although hidden, the backups in the partition consume the drive space. Therefore, when checking the capacity of your HDD according to Windows, you might note that the total capacity of the storage drive appears to be smaller than anticipated. This discrepancy is explained by the contents of the hidden partition.

The Product Recovery Program contained within this area enables you to restore the complete contents of your HDD to the same state as it was when originally shipped from the factory.

If you are using the recovery discs that are shipped with your computer, the Product Recovery Program will be restored to your computer in addition to all other content originally shipped from the factory. This will take up additional capacity on your HDD if your computer did not initially ship with the Product Recovery Program.

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Attention:

- All files on the primary storage drive partition (usually drive C) will be deleted in the recovery process. However, before any data is overwritten, you will be given the opportunity to save one or more files to other media.
- If your optical drive is not attached to your ThinkPad computer during recovery, DVD software and CD-recording software will not be installed. To ensure that they will be installed correctly, install the optical drive before performing a recovery operation.
- Recovery takes several hours. The length of time depends on the method you use. If you use recovery discs which you have created or purchased, recovery takes at least five hours.

Before restoring the system, initialize the settings of the BIOS Setup Utility:

1. Enter BIOS Setup Utility.
2. Press F9 to restore the default system settings. Select **Yes** and press **Enter**.
3. Press F10 to save the system settings. Select **Yes** and press **Enter**. The computer will restart.

Restoring the factory contents from the service partition

1. If possible, save all your files and shut down your operating system.
2. Turn off the computer, and then turn it on again.
3. When the ThinkPad logo comes up, immediately press the Lenovo Care button, F11, or Enter key. The Rescue and Recovery workspace opens.
4. Click **Full Restore** and follow the instructions on the screen.

Restoring the factory contents using the recovery discs

If a set of recovery discs is enclosed with your computer, or you have created or purchased recovery discs, you can restore the factory contents by using the discs in the following procedure:

1. Make sure that in the BIOS Setup Utility the startup sequence is set so that the system starts up from the recovery discs.
2. Insert the Rescue and Recovery disc into the DVD drive.
3. Restart the computer. After a short wait, the Rescue and Recovery workspace opens.
4. Click **Full Restore** and follow the instructions on the screen.

Recovering data

If you performed a backup operation using the Rescue and Recovery program, you also have one or more backups stored that reflect the contents of the HDD as it existed at various points in time. These backups might be stored on your HDD, or a network drive, or on removable media, depending on the options you selected during the backup operation.

You can use either the Rescue and Recovery program or the Rescue and Recovery workspace to restore the contents of the HDD to an earlier state using any of the stored backups. The Rescue and Recovery workspace on your HDD model runs independently of the Windows operating system. Therefore, you can start it by pressing the Lenovo Care button, F11, or Enter key when prompted during startup.

After the Rescue and Recovery workspace opens you can perform a recovery operation, even if you are unable to start Windows.

Chapter 5. Upgrading and replacing devices

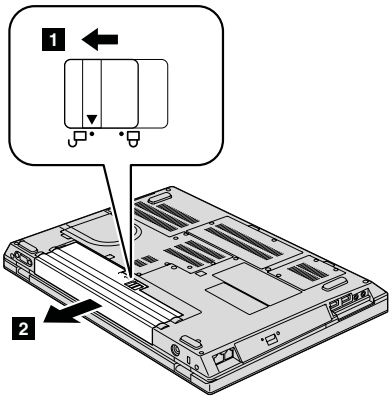
Replacing the battery

Important:

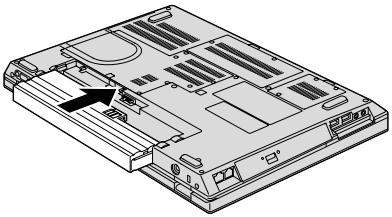
Read *Safety and Warranty Guide* before replacing the battery.

To replace the battery, do the following:

1. **Turn off the computer, or enter hibernation mode.** Then disconnect the AC adapter and all cables from the computer.
2. Close the computer display, and turn the computer over.
3. Unlock the battery latch by sliding it to the left **1** . Then, remove the battery **2** .



4. Install a fully charged battery.



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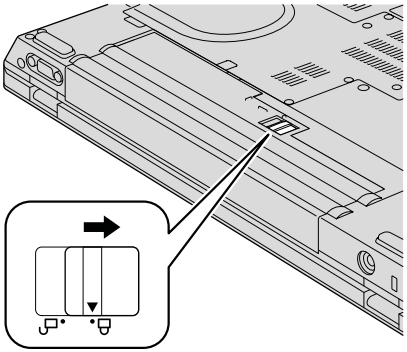
5. Slide the battery latch to the locked position.



6. Turn the computer over again. Connect the AC adapter and the cables to the computer.

Upgrading the hard disk drive

Important:

Read *Safety and Warranty Guide* before replacing the HDD.

You can replace the hard disk drive (HDD) with a new one by following the procedure below. You can purchase a new HDD from your reseller or Lenovo marketing representative.

Note:

- Replace the HDD only if you are upgrading it or having it repaired. The connectors and slot of these drives were not designed for frequent changes, or drive swapping.
- The Rescue and Recovery workspace and the Product Recovery program are not included on an optional drive.

Attention:

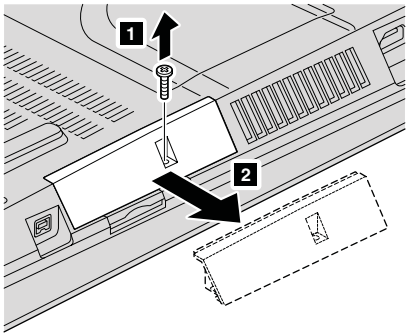
Handling an HDD

- Do not drop the drive or subject it to physical shocks. Place the drive on a soft material, such as cloth, which absorbs physical shock.
- Do not apply pressure to the cover of the drive.
- Do not touch the connector.

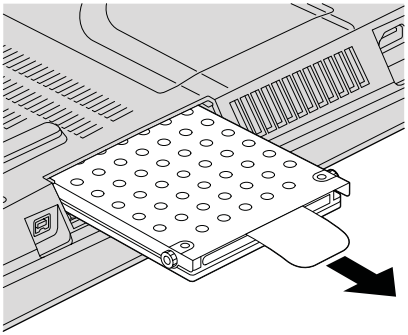
The drive is very sensitive. Incorrect handling can cause damage and permanent loss of data on the drive. Before removing the HDD, make a backup copy of all the data on the drive, and turn the computer off. Never remove the drive while the system is operating, in standby mode, or in hibernation mode.

To replace the HDD, do the following:

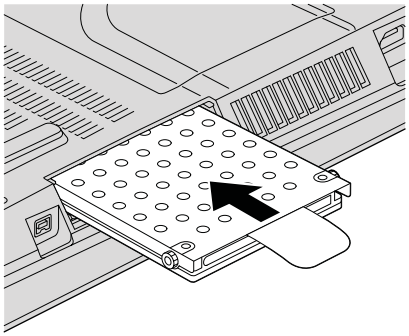
1. **Turn off the computer**; then disconnect the AC adapter and all cables from the computer.
2. Close the computer display, and turn the computer over.
3. Remove the battery.
4. Remove the screw that secures the slot cover 1 , and remove the slot cover 2 .



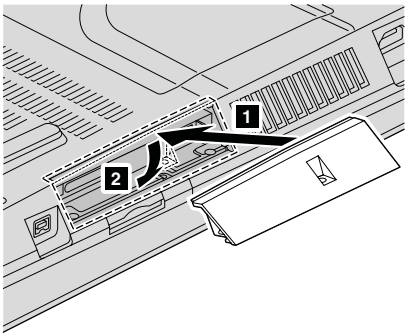
5. Remove the HDD by pulling out the tab.



6. Insert the HDD into the slot; then press it firmly into place.



7. Put the slot cover back in place **1**, and reinstall it **2**. Reinstall the screw.



8. Reinstall the battery.
9. Turn the computer over again. Connect the AC adapter and the cables to the computer.

Replacing memory

Important:

Read *Safety and Warranty Guide* before replacing memory.

Increasing memory capacity is an effective way to make programs run faster. You can increase the amount of memory in your computer by installing a double data rate two (DDR2) synchronous dynamic random access memory (SDRAM) unbuffered small outline dual inline memory module (SO-DIMM), available as an option, in the memory slot of your computer. SO-DIMMs with different capacities are available.

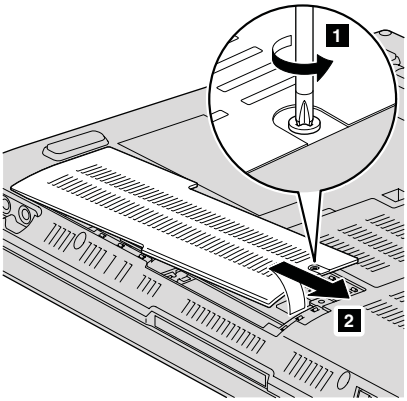
Note: Use only the memory types supported by your computer. If you incorrectly install the optional memory or install an unsupported memory type, a warning beep will sound when you try to start the computer.

To install an SO-DIMM, do the following:

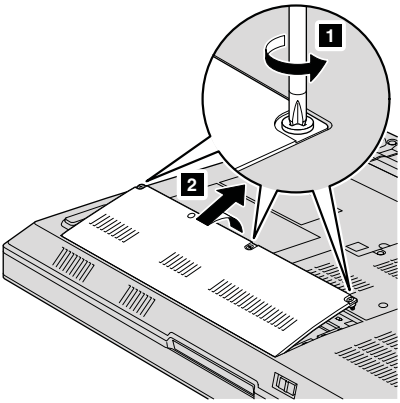
1. Touch a metal table or a grounded metal object. This action reduces any static electricity in your body, which could damage the SO-DIMM. Do not touch the contact edge of the SO-DIMM.
2. **Turn off the computer**; then disconnect the AC adapter and all cables from the computer.
3. Close the computer display, and turn the computer over.
4. Remove the battery.

5. Loosen the screws 1, and then remove the memory slot cover 2.

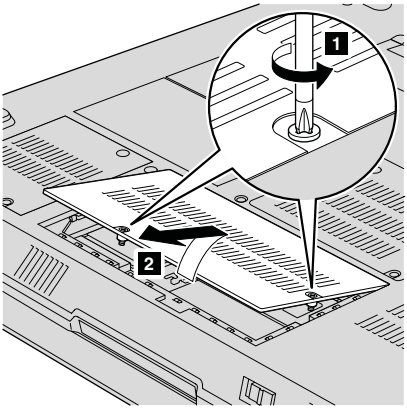
ThinkPad SL 300:



ThinkPad SL 400:

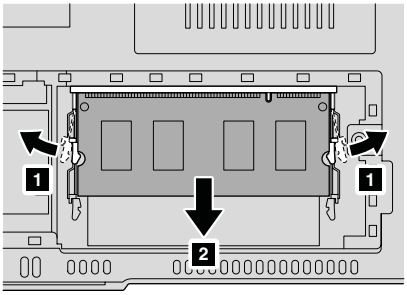


ThinkPad SL 500:

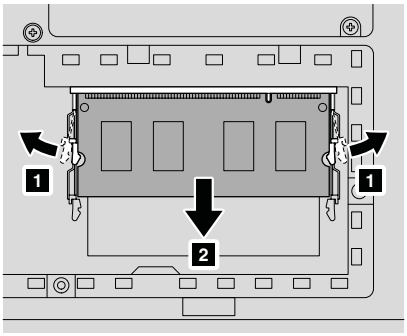


6. If the two SO-DIMMs are already installed in the memory slots, remove an SO-DIMM to make room for the new one by pressing out on the latches on both edges of the socket at the same time. Be sure to save it for future use.

ThinkPad SL 300:



ThinkPad SL 400 and SL500:

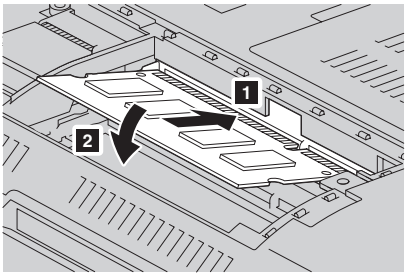


7. Find the notch on the contact edge of the SO-DIMM.

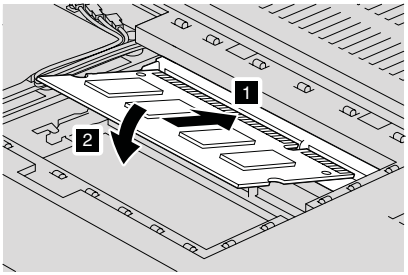
   Attention: To avoid damaging the SO-DIMM, do not touch its contact edge.

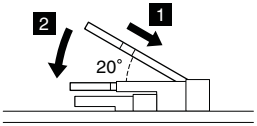
8. With the notched end of the SO-DIMM toward the contact edge side of the socket, insert the SO-DIMM into the socket at an angle of about 20 degrees **1** ; then press it firmly **2** .

ThinkPad SL 300:



ThinkPad SL 400 and SL500:

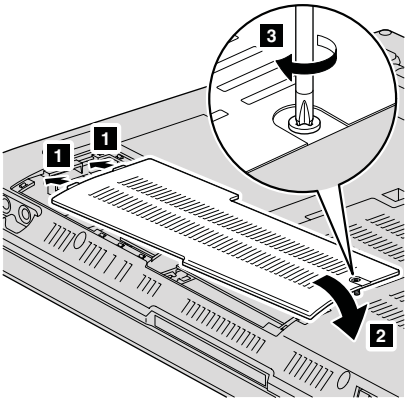




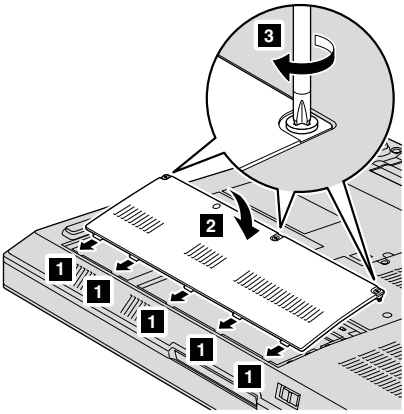
9. Pivot the SO-DIMM downward until it snaps into place.
10. Make sure that the card is firmly fixed in the slot and does not move easily.

11. Align the memory slot cover as shown in the drawing 1 , and put it back into place 2 . Tighten the screws 3 .

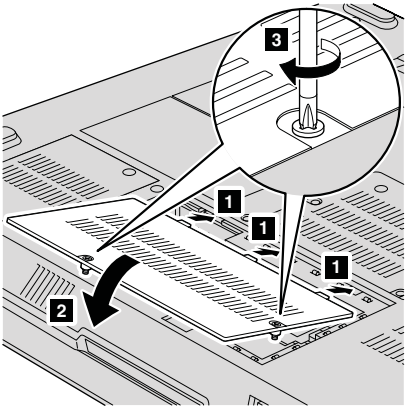
ThinkPad SL 300:



ThinkPad SL 400:



ThinkPad SL 500:



12. Reinstall the battery.
13. Turn the computer over, and reconnect the AC adapter and the cables to the computer.

To make sure that the SO-DIMM is installed correctly, do as follows:

1. Turn on the computer.
2. When the ThinkPad logo comes up, immediately press F1 to enter the BIOS Setup Utility.
3. The “Installed memory” item shows the total amount of memory installed in your computer.

Chapter 6. Getting help and service

Getting help and service

If you need help, service, technical assistance, or just want more information about ThinkPad computers, you will find a wide variety of sources available from Lenovo to assist you. This section contains information about where to go for additional information about ThinkPad computers, what to do if you experience a problem with your computer, and whom to call for service should it be necessary.

Microsoft Service Packs are the latest software source for Windows product updates. They are available via Web download (connection charges may apply) or via a disc. For more specific information and links, please go to the Microsoft Web site at http://www.microsoft.com. Lenovo offers Up and Running technical assistance with installation of, or questions related to, Service Packs for your Lenovo-preinstalled Microsoft Windows product. For information, please contact the Customer Support Center at the phone number(s) listed in “Worldwide telephone list” on page 47. Some fees might apply.

Getting help on the Web

The Lenovo Web site on the World Wide Web has up-to-date information about ThinkPad computers and support. The address for the Personal Computing home page is http://www.lenovo.com/think.

You can find support information for your ThinkPad computer at http://www.lenovo.com/think/support. Research this Web site to learn how to solve problems, find new ways to use your computer, and learn about options that can make working with your ThinkPad computer even easier.

Calling the Customer Support Center

If you have tried to correct the problem yourself and still need help, during the warranty period, you can get help and information by telephone through the Customer Support Center. The following services are available during the warranty period:

- Problem determination - Trained personnel are available to assist you with determining if you have a hardware problem and deciding what action is necessary to fix the problem.

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- Lenovo hardware repair - If the problem is determined to be caused by Lenovo hardware under warranty, trained service personnel are available to provide the applicable level of service.
- Engineering change management - Occasionally, there might be changes that are required after a product has been sold. Lenovo or your reseller, if authorized by Lenovo, will make selected Engineering Changes (ECs) available that apply to your hardware.

The following items are not covered:
- Replacement or use of parts not manufactured for or by Lenovo or nonwarranted parts

  Note: All warranted parts contain a 7-character identification in the format FRU XXXXXXX
- Identification of software problem sources
- Configuration of BIOS as part of an installation or upgrade
- Changes, modifications, or upgrades to device drivers
- Installation and maintenance of network operating systems (NOS)
- Installation and maintenance of application programs

To determine if your machine is in warranty and when the warranty expires, go to http://www.lenovo.com/think/support, and click **Warranty**, then follow the instructions on the screen.

For the terms and conditions of the Lenovo Limited Warranty that applies to your Lenovo hardware product, see Chapter 3, "Warranty information" in the *Safety and Warranty Guide* included with your Lenovo hardware product.

If possible, be near your computer when you make your call in case the technical assistance representative needs to help you resolve a computer problem. Please ensure that you have downloaded the most current drivers and system updates, run diagnostics, and recorded information before you call. When calling for technical assistance, please have the following information available:
- Machine Type and Model
- Serial numbers of your computer, monitor, and other components, or your proof of purchase
- Description of the problem
- Exact wording of any error messages
- Hardware and software configuration information for your system

The telephone numbers for your Customer Support Center location are located in the “Worldwide telephone list” on page 47 section of this guide.

Note: Telephone numbers are subject to change without notice. For the latest list of Customer Support Center telephone numbers and hours of operation,

visit the Support Web site at http://www.lenovo.com/support/phone. If the number for your country or region is not listed, contact your Lenovo reseller or Lenovo marketing representative.

Getting help around the world

If you travel with your computer or relocate it to a country where your ThinkPad machine type is sold, your computer might be eligible for International Warranty Service, which automatically entitles you to obtain warranty service throughout the warranty period. Service will be performed by service providers authorized to perform warranty service.

Service methods and procedures vary by country, and some services might not be available in all countries. International Warranty Service is delivered through the method of service (such as depot, carry-in, or on-site service) that is provided in the servicing country. Service centers in certain countries might not be able to service all models of a particular machine type. In some countries, fees and restrictions might apply at the time of service.

To determine whether your computer is eligible for International Warranty Service and to view a list of the countries where service is available, go to http://www.lenovo.com/think/support, click **Warranty**, and follow the instructions on the screen.

Worldwide telephone list

Phone numbers are subject to change without notice. For the most current phone numbers, go to http://www.lenovo.com/support/phone.

Country or Region	Telephone Number
Africa	Africa: +44 (0)1475-555-055 South Africa: +27-11-3028888 and 0800110756 Central Africa: Contact the nearest Lenovo Business Partner
Argentina	0800-666-0011 (Spanish)
Australia	131-426 (English)
Austria	01-211-454-610 (Warranty service and support) (German)
Belgium	02-225-3611 (Warranty service and support) (Dutch, French)
Bolivia	0800-10-0189 (Spanish)

Country or Region	Telephone Number
Brazil	Sao Paulo region: (11) 3889-8986 Outside Sao Paulo region: 0800-701-4815 (Brazilian Portuguese)
Canada	1-800-565-3344 (English, French) In Toronto only call 416-383-3344
Chile	800-361-213 188-800-442-488 (Spanish)
China	Technical Support Line 800-990-8888 86-10-58851110 (Mandarin)
China (Hong Kong S.A.R.)	ThinkPad (Technical enquiry hotline): 2516-3939 (Hong Kong) ThinkPad Service Center: 2825-6580 (Hong Kong) Multimedia Home PC: 800-938-228 (Hong Kong) (Cantonese, English, Mandarin)
China (Macau S.A.R.)	ThinkPad (Technical enquiry hotline): 0800-839 (Macau) ThinkPad Service Center: 2871-5399 (Macau) Multimedia Home PC: 0800-336 (Macau) (Cantonese, English, Mandarin)
Colombia	1-800-912-3021 (Spanish)
Costa Rica	0-800-011-1029 (Spanish)
Croatia	0800-0426
Cyprus	+357-22-841100
Czech Republic	+420-2-7213-1316
Denmark	7010-5150 (Warranty service and support) (Danish)
Dominican Republic	1-866-434-2080 (Spanish)
Ecuador	1-800-426911 (Spanish)
Egypt	+202-35362525
El Salvador	800-6264 (Spanish)
Estonia	+372 66 00 800 +372 6776793

Country or Region	Telephone Number
Finland	+358-800-1-4260 (Warranty service and support) (Finnish)
France	Hardware 0810-631-213 (Warranty service and support) Software 0810-631-020 (Warranty service and support) (French)
Germany	01805-25-35-58 (Warranty service and support) (German)
Greece	+30-210-680-1700
Guatemala	1800-624-0051 (Spanish)
Honduras	Tegucigalpa: 232-4222 San Pedro Sula: 552-2234 (Spanish)
India	1800-425-6666 or +91-80-2678-8970 (English)
Indonesia	800-140-3555 (English) 62-21-251-2955 (Bahasa Indonesian)
Ireland	01-881-1444 (Warranty service and support) (English)
Israel	Givat Shmuel Service Center: +972-3-531-3900 (Hebrew, English)
Italy	+39-800-820094 (Warranty service and support) (Italian)
Japan	ThinkPad Products Toll Free: 0120-20-5550 International: +81-46-266-4716 The above numbers will be answered with a Japanese language voice prompt. For telephone support in English, please wait for the Japanese voice prompt to end, and an operator will answer. Please say ″English support please,″ and your call will be transferred to an English speaking operator.
Korea	1588-5801 (Korean)
Latvia	+371 7070360
Lithuania	+370 5 278 66 00
Luxembourg	+352-360-385-343 (French)
Malaysia	1800-88-8558 (English, Bahasa, Melayu)
Malta	+35621445566
Mexico	001-866-434-2080 (Spanish)

Country or Region	Telephone Number
Middle East	+44 (0)1475-555-055
Netherlands	+31-20-514-5770 (Dutch)
New Zealand	0800-733-222 (English)
Nicaragua	001-800-220-1830 (Spanish)
Norway	8152-1550 (Warranty service and support) (Norwegian)
Panama	206-6047 001-866-434-2080 (Lenovo Customer Support Center- toll Free) (Spanish)
Peru	0-800-50-866 (Spanish)
Philippines	1800-1888-1426 (English) 63-2-995-8420 (Filipino)
Poland	+48-22-878-6999
Portugal	+351 21 892 7046 (Portuguese)
Romania	+4-021-224-4015
Russia	Moscow: +7 (495) 258 6300 Toll free: 8 800 200 6300 (Russian)
Singapore	1800-3172-888 (English, Bahasa, Melayu)
Slovakia	+421-2-4954-5555
Slovenia	+386-1-200-50-60
Spain	91-714-7983 0901-100-000 (Spanish)
Sri Lanka	+9411 2493547 +9411 2493548 (English)
Sweden	077-117-1040 (Warranty service and support) (Swedish)
Switzerland	0800-55-54-54 (Warranty service and support) (German, French, Italian)
Taiwan	886-2-8723-9799 or 0800-000-700 (Mandarin)
Thailand	1-800-299-229 (Thai)
Turkey	00800-4463-2041 (Turkish)

Country or Region	Telephone Number
United Kingdom	08705-500-900 (Standard warranty support) (English)
United States	1-800-426-7378 (English)
Uruguay	000-411-005-6649 (Spanish)
Venezuela	0-800-100-2011 (Spanish)
Vietnam	For northern area and Hanoi: 84-4-843-6675 For southern area and Ho Chi Minh City: 84-8-829-5160 (English, Vietnamese)

Appendix A. Warranty information

This Appendix provides information regarding the warranty period and type of warranty service applicable to your Lenovo hardware product in your country or region. For the terms and conditions of the Lenovo Limited Warranty that applies to your Lenovo hardware product, see Chapter 3, Warranty Information in the *Safety and Warranty Guide* included with your Lenovo hardware product.

Machine Type	Country or Region of Purchase	Warranty period	Types of Warranty Service
2738, 2743, 2746	US, Canada, Mexico, Brazil, Australia, and Japan	Parts and Labor - 1 years Battery pack - 1 year	3 1
	Other	Parts and Labor - 1 years Battery pack - 1 year	4 1

Types of warranty service

1. **Customer Replaceable Unit ("CRU") Service**

   Under CRU Service, your Service Provider will ship CRUs to you for installation by you. CRU information and replacement instructions are shipped with your product and are available from Lenovo at any time upon request. CRUs that are easily installed by you are called Self-service CRUs, while Optional-service CRUs may require some technical skill and tools. Installation of Self-service CRUs is your responsibility. You may request that a Service Provider install Optional-service CRUs under one of the other types of warranty service designated for your product. An optional service offering may be available for purchase from Lenovo to have Lenovo install Self-service CRUs for you. You may find a list of CRUs and their designation in the publication that ships with your product or at http://www.lenovo.com/CRUs. The requirement to return a defective CRU, if any, will be specified in the materials shipped with a replacement CRU. When return is required, 1) return instructions, a prepaid return shipping label, and a container will be included with the replacement CRU; and 2) you may be charged for the replacement CRU if your Service Provider does not receive the defective CRU within thirty (30) days of your receipt of the replacement.

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2. **On-site Service**

   Under On-Site Service, your Service Provider will either repair or exchange the product at your location. You must provide a suitable working area to allow disassembly and reassembly of the Lenovo product. For some products, certain repairs may require your Service Provider to send the product to a designated service center.

3. **Courier or Depot Service**

   Under Courier or Depot Service, your product will be repaired or exchanged at a designated service center, with shipping arranged by your Service Provider. You are responsible for disconnecting the product. A shipping container will be provided to you for you to return your product to a designated service center. A courier will pick up your product and deliver it to the designated service center. Following its repair or exchange, the service center will arrange the return delivery of the product to you.

4. **Customer Carry-In or Mail-In Service**

   Under Customer Carry-In or Mail-In Service, your product will be repaired or exchanged at a designated service center, with delivery or shipping arranged by you. You are responsible to deliver or mail, as your Service Provider specifies, (prepaid by you unless specified otherwise) the product, suitably packaged to a designated location. After the product has been repaired or exchanged, it will be made available for your collection. Failure to collect the product may result in your Service Provider disposing of the product as it sees fit. For Mail-in Service, the product will be returned to you at Lenovo's expense, unless your Service Provider specifies otherwise.

5. **Product Exchange Service**

   Under Product Exchange Service, Lenovo will ship a replacement product to your location. You are responsible for its installation and verification of its operation. The replacement product becomes your property in exchange for the failed product, which becomes the property of Lenovo. You must pack the failed product in the shipping carton used to ship the replacement product and return it to Lenovo. Transportation charges, both ways, are paid by Lenovo. Failure to use the carton in which the replacement product was received may result in your responsibility for damage to the failed product during shipment. You may be charged for the replacement product if Lenovo does not receive the failed product within thirty (30) days of your receipt of the replacement product.

Appendix B. Customer Replaceable Units (CRUs)

Customer Replaceable Units (CRUs) are computer parts that the customer can upgrade or replace. There are two types of CRU: self-service and optional-service. Self-service CRUs are easy to install. They may be standalone or latched, or require a screwdriver to remove a maximum of two screws, whereas optional-service CRUs require some technical skill, as well as tools such as a screwdriver. However, both self-service and optional-service CRUs are safe for the customer to remove and replace.

Customers are responsible for replacing all self-service CRUs. Optional-service CRUs can be removed and installed by customers or, during the warranty period, by a Lenovo service technician.

Lenovo notebook computers contain both self-service and optional-service CRUs:

- **Self-service CRUs:** these CRUs can be unplugged, or are secured by no more than two screws. Examples of this type of CRU are the AC adapter, the power cord, the battery, and the hard drive. In some products, such components as memory, wireless cards, notebook keyboards, and palm rests with fingerprint reader and touchpad may also be CRUs.
- **Optional-service CRUs:** these CRUs are isolated parts within the computer that are concealed by an access panel, which is typically secured by more than two screws. Once the access panel is removed, the CRU is visible. Both types of CRU are listed in the table on the following page.

Online *Access Help* and the Lenovo Limited Warranty-01 (LLW) warranty URL "http://www.lenovo.com/CRUs" provide instructions for replacing self-service and optional-service CRUs. To start the Access Help program, click **Start**, move the pointer to **All Programs**; then to **ThinkVantage**. Click **Access Help**. CRU URL offers three options: auto detect, "key in the machine type," and a "drop down and select." Additionally, the Service and Troubleshooting Guide (this guide) and Setup Instructions provide instructions for several critical CRUs.

If you are unable to access these instructions or if you have difficulty replacing a CRU, you can use either of the following additional resources:

- The Online Hardware Maintenance Manual and Online Videos, available from the Support Web site http://www.lenovo.com/think/support/site.wss/document.do?lndocid=part-video.

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- The Customer Support Center. For the telephone number of the Support Center for your country or region, see “Worldwide telephone list” on page 47.

Note: Use only computer parts provided by Lenovo. For warranty information about the CRUs for your machine type, see Chapter 3, Warranty Information in the *Safety and Warranty Guide***.**

The following table provides a list of CRUs for your computer and tells where to find the replacement instructions.

	Service and Troubleshooting Guide	Setup Instructions	Access Help	Online Hardware Maintenance Manual	Online Video
Self-service CRUs					
AC adapter		X			
Power cord for AC adapter		X			
TrackPoint cap			X		
Battery	X	X	X	X	X
Hard disk drive	X		X	X	X
Memory	X		X	X	X
Optical drive			X	X	X
Optional-service CRUs					
Palm rest			X	X	X
PCI Express Mini Card for wireless LAN/WiMAX			X	X	X
PCI Express Mini Card for wireless WAN			X	X	X
Intel Turbo Memory card			X	X	X

Appendix C. Features and Specifications

Features

Processor

- See the system properties of your computer. You can do this as follows:

  Click **Start**, right-click **Computer** (in Windows XP, **My Computer**); then from the pull down menu select **Properties**.

Memory

- Double data rate (DDR) 2 synchronous dynamic random access memory

Storage device

- 2.5-inch (64 mm) hard disk drive

Display

The color display uses TFT technology:

- Size: 13.3 inch (338 mm)

  Resolution:
  - LCD: Up to 1280-by-800
  - External monitor: Up to 2048-by-1536
- Size: 14.1 inch (358 mm)

  Resolution:
  - LCD: Up to 1440-by-900, depending on the model
  - External monitor: Up to 2048-by-1536
- Size: 15.4 inch (391 mm)

  Resolution:
  - LCD: Up to 1680-by-1050, depending on the model
  - External monitor: Up to 2048-by-1536
- Brightness control
- Integrated camera (on some models)

Keyboard

- 84-key, 85-key, or 89-key
- UltraNav (TrackPoint and touch pad)
- Fn key function
- Lenovo Care button
- Volume control buttons

Interface

- External-monitor connector
- Stereo headphone jack

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- Microphone jack
- 3 Universal Serial Bus (USB) connectors
- IEEE 1394 connector
- RJ11 Modem connector
- RJ45 Ethernet connector

Card slot
- Express Card
- 7-in-1 Media Card Reader

Optical drive
- Combo, Multi-Burner, or Blu-ray drive, depending on the model

Wireless features
- Integrated wireless LAN
- Integrated Bluetooth (on some models)
- Integrated wireless WAN (on some models)
- Integrated WiMax (on some models)

Security features
- Fingerprint reader (on some models)

Specifications

Size

ThinkPad SL300
- Width: 320 mm (12.6 inch)
- Depth: 238 mm (9.4 inch)
- Height: 30 to 34 mm (1.18 inch to 1.34 inch)

ThinkPad SL400
- Width: 336 mm (13.2 inch)
- Depth: 247 mm (9.7 inch)
- Height: 33.5 to 38.5 mm (1.31 inch to 1.52 inch)

ThinkPad SL500
- Width: 358 mm (14.1 inch)
- Depth: 260 mm (10.2 inch)
- Height: 37 to 39 mm (1.46 inch to 1.54 inch)

Environment

- Maximum altitude without pressurization: 3048 m (10,000 ft)
- Temperature
  - At altitudes up to 2438 m (8000 ft)
    Operating: 5.0°C to 35.0°C (41°F to 95°F)
    Non-operating: 5.0°C to 43.0°C (41°F to 109°F)
  - At altitudes above 2438 m (8000 ft)
    Maximum temperature when operating under the unpressurized condition: 31.3°C (88°F)

  Note: When you charge the battery pack, its temperature must be at least 10°C (50°F).
- Relative humidity:
  - Operating: 8% to 80%
  - Non-operating: 5% to 95%

Heat output

- 65 W (222 Btu/hr) maximum or 90 W (307 Btu/hr) maximum (depending on the model)

Power source (AC adapter)

- Sine-wave input at 50 to 60 Hz
- Input rating of the AC adapter: 100-240 V AC, 50 to 60 Hz

Battery pack

- Lithium-ion (Li-Ion) battery pack
  - Nominal voltage: 10.8 V DC
  - Capacity: 4.8 AH

Note: On your computer the modem connector adjoins the battery slot. If a ThinkPad 9-Cell Li-Ion Battery is installed, to use the modem connector you need to replace the battery with a ThinkPad 4-Cell Li-Ion Battery or ThinkPad 6-Cell Li-Ion Battery.

Battery life

- For percentage of remaining battery power, see the Power Manager Gauge on the task bar.

Appendix D. Notices

Notices

Lenovo may not offer the products, services, or features discussed in this document in all countries. Consult your local Lenovo representative for information on the products and services currently available in your area. Any reference to a Lenovo product, program, or service is not intended to state or imply that only that Lenovo product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any Lenovo intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any other product, program, or service.

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Morrisville, NC 27560
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This product is subject to the United States Export Administration Regulations (EAR) and has an Export Classification Control Number (ECCN) of 4A994.b. It can be re-exported except to any of the embargoed countries in the EAR E1 country list.

Electronic emissions notices

The following information refers to ThinkPad SL300, SL400, and SL500, machine type 2738, 2743, and 2746.

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, used, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an authorized dealer or service representative for help.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from Lenovo authorized dealers. Lenovo is not responsible for any radio or television interference caused by using other than recommended cables or connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Responsible party:
Lenovo (United States) Incorporated
1009 Think Place - Building One
Morrisville, NC 27560
Telephone: 1-919-294-5900

Industry Canada Class B emission compliance statement

This Class B digital apparatus complies with Canadian ICES-003.

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

European Union EMC Directive conformance statement

This product is in conformity with the protection requirements of EU Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility. Lenovo cannot accept responsibility for any failure to satisfy the protection requirements resulting from a nonrecommended modification of the product, including the installation of non-Lenovo option cards.

This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to CISPR 22/European

Standard EN 55022. The limits for Class B equipment were derived for typical residential environments to provide reasonable protection against interference with licensed communication devices.

EU-EMC Directive (2004/108/EC) EN 55022 class B Statement of Compliance

Deutschsprachiger EU Hinweis

Hinweis für Geräte der Klasse B EU-Richtlinie zur Elektromagnetischen Verträglichkeit

Dieses Produkt entspricht den Schutzanforderungen der EU-Richtlinie 2004/108/EG (früher 89/336/EWG) zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der EN 55022 Klasse B ein.

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Deutschland:

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Dieses Produkt entspricht dem "Gesetz über die elektromagnetische Verträglichkeit von Betriebsmitteln" EMVG (früher "Gesetz über die elektromagnetische Verträglichkeit von Geräten"). Dies ist die Umsetzung der EU-Richtlinie 2004/108/EG (früher 89/336/EWG) in der Bundesrepublik Deutschland.

Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Betriebsmitteln, EMVG vom 20. Juli 2007 (früher Gesetz über die elektromagnetische Verträglichkeit von Geräten), bzw. der EMV EG Richtlinie 2004/108/EC (früher 89/336/EWG), für Geräte der Klasse B.

Dieses Gerät ist berechtigt, in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen. Verantwortlich für die Konformitätserklärung nach Paragraf 5 des EMVG ist die Lenovo (Deutschland) GmbH, Gropiusplatz 10, D-70563 Stuttgart.

Informationen in Hinsicht EMVG Paragraf 4 Abs. (1) 4:
Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55022 Klasse B.

Japanese VCCI Class B statement

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Notice for users in the U.S.A.

California Perchlorate Information:

Products containing CR (manganese dioxide) lithium coin cell batteries may contain perchlorate.

Perchlorate Material — special handling may apply. See the flowing web site:

http://www.dtsc.ca.gov/hazardouswaste/perchlorate

ENERGY STAR model information

ENERGY STAR® is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy aimed at saving money and protecting the environment through energy efficient products and practices.

Lenovo is proud to offer our customers products with the ENERGY STAR qualified designation. Lenovo computers of the following machine types, if the ENERGY STAR mark is affixed, have been designed and tested to conform to the ENERGY STAR 4.0 program requirements for computers.

2738, 2743, 2746

By using ENERGY STAR qualified products and taking advantage of the power-management features of your computer, you can help reduce the consumption of electricity. Reduced electrical consumption can contribute to potential financial savings, a cleaner environment, and the reduction of greenhouse gas emissions.

For more information about ENERGY STAR, visit the following Web site:

http://www.energystar.gov

Lenovo encourages you to make efficient use of energy an integral part of your day-to-day operations. To help in this endeavor, Lenovo has preset the following power-management features to take effect when your computer has been inactive for a specified length of time:

Windows XP	Windows Vista
• **Power plan: Energy Star at AC mode** Turn off monitor: After 10 minutes Turn off hard disks: After 15 minutes System standby: After 25 minutes System hibernates: Never	• **Power plan: Energy Star at AC mode** Turn off the display: After 10 minutes Put the computer to sleep: After 25 Advanced power settings: - Turn off hard disks: After 15 minutes - Hibernate: Never

To awaken your computer from Sleep (Windows Vista) or System Standby (Windows XP) mode, press Fn key on your keyboard. For more information about these settings, see your Windows Help and Support information system.

The Wake on LAN® function is set to Enable when your Lenovo computer is shipped from the factory, and the setting remains valid even when the computer is in Sleep or Standby mode. If you do not need to have Wake on LAN set to Enable while your computer is in Sleep or Standby mode, you can reduce the power consumption and prolong the time in Sleep or Standby mode, by switching the setting of Wake on LAN for Sleep or Standby mode to Disable. To switch the setting of Wake on LAN, go to Device Manager and do as follows:

For Windows Vista:

1. Click **Start** → **Control panel**.
2. Click **Hardware and Sound** → **Device Manager**.
3. In the Device Manager window, expand **Network adapters**.
4. Right-click your network adapter device, and click **Properties**.
5. Click the **Power Management** tab.
6. Clear the **Allow this device to wake the computer** check box.
7. Click **OK**

For Windows XP:

1. Click **Start** → **Control panel**.
2. Click **Performance and Maintenance** → **System**.
3. Click the **Hardware** tab, and click **Device Manager**.
4. In the Device Manager window, expand **Network adapters**.
5. Right-click your network adapter device, and click **Properties**.
6. Click the **Power Management** tab.

7. Clear the **Allow this device to bring the computer out of standby** check box.
8. Click **OK**.

Notice for Regulatory information

The latest Regulatory Notice has been uploaded on the Web site. To refer to it, go to http://www.lenovo.com/think/support, click Troubleshooting, and then click User's guides and manuals.

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Index

A

AC adapter
  troubleshooting 25
Access Help 1, 7, 10

B

battery
  replacing 33
  troubleshooting 25
BIOS Setup Utility 8
  initializing 30

C

carrying the computer 4
cleaning
  computer cover 5
  computer display 6
  keyboard 6
computer display
  cleaning 6
computer screen
  troubleshooting 22
CRU (customer replaceable units) 55
Customer Replaceable Unit (CRU) 55
customer support center 45
  worldwide telephone list 47

D

diagnosing
  system 9
diagnosing problems 9
drives
  handling 4

E

error messages
  troubleshooting 10

F

factory contents
  restoring 29
features
  hardware 57
features and specifications 57
finding information 1
fingerprint reader
  caring for 5
fingerprint reader *(continued)*
  troubleshooting 26
frequently asked questions 7

H

hard disk drive
  troubleshooting 26
  upgrading 34
help and service 45
hibernation mode
  troubleshooting 20

I

important instructions v
important tips 3

K

keyboard
  cleaning 6
  troubleshooting 19

L

Lenovo Care 2
Lenovo Care button 1, 2

M

memory
  replacing 37
  troubleshooting 18
modem connection 4

N

negative ions 3
notices 61
  electronic emissions 62
  EU environmental 65
  Export classification 62
  FCC statement 62
  for US users 65
  Regulatory information 68

P

packing material 3
password
  setting 5
  troubleshooting 18
PC-Doctor 9
  for Windows 9
pointing device
  troubleshooting 19
product features 57
product specifications 58
product warranty 53
  International Warranty Service 47
publication guide 1

R

recovering data 31
recovery discs
  restoring the factory contents 30
recovery options 29
registering your computer 4
Regulatory Notice 2
replacing devices 33
Rescue and Recovery 2, 29
Rescue and Recovery workspace 9
restoring the factory contents 29

S

Safety and Warranty Guide 1
service and help 45
service partition
  diagnosing the system 9
  restoring the factory contents 30
Setup Instructions 1
sleep mode
  troubleshooting 20
specifications
  hardware 58
startup problems
  troubleshooting 26
storage media
  handling 4

T

taking care of your computer 3
tips, important 3
trademarks 69
troubleshooting 10
  AC adapter 25
  battery 25
  computer screen 22
  error messages 10
  errors without messages 16
  fingerprint reader 26
  keyboard 19
  memory 18
  password 18
  pointing device 19

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troubleshooting *(continued)*
sleep or hibernation 20
startup problems 26
storage device 26

U

upgrading devices 33

W

warranty information 53
Web help 45
worldwide support telephone
list 47

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